

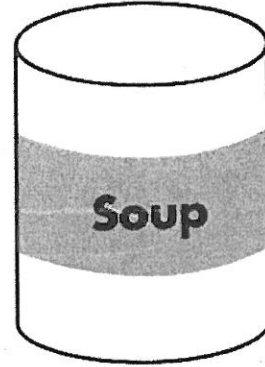
Name \_\_\_\_\_

# Dependent and Independent Variables

A **dependent** variable changes in response to another variable, an **independent variable**.

An independent causes the change in a dependent variable. It is called *independent* because another variable does not cause it to change.

For example, the capacity ( $c$ ) of this soup can, can depend in part on the diameter ( $d$ ) of the top of the can. So, the diameter ( $d$ ) is an independent variable that causes the dependent variable, the capacity ( $c$ ) of the can, to change.



Underline the independent variable and circle the dependent variable in each situation.

1. The number of hours ( $h$ ) studying and the score ( $s$ ) on a test
2. The length ( $l$ ) of a pencil and the number of times ( $t$ ) it has been sharpened
3. The length of a book in pages ( $p$ ) and the number of words ( $w$ ) in a story
4. The number of students ( $s$ ) ahead of you in the lunch line and the time ( $t$ ) it takes you to get lunch
5. The amount of time ( $t$ ) to finish a race and the number of laps ( $l$ ) around a track
6. Tickets ( $t$ ) sold for a race and the amount of money ( $m$ ) collected
7. The height ( $h$ ) of a fence and the amount of wood ( $w$ ) to make the fence
8. The height ( $h$ ) of a fence and the time ( $t$ ) it takes to climb the fence

9. **Writing to Explain** Write your own situation where speed ( $s$ ) is an independent variable.

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Name \_\_\_\_\_

# Dependent and Independent Variables

Underline the independent variable and circle the dependent variable in each situation.

1. The number of days ( $d$ ) working and the amount of money ( $m$ ) you make
2. The pounds ( $p$ ) of sand in a sandbox and the diameter ( $d$ ) of a sandbox
3. The thickness of a book in inches ( $i$ ) and the weight ( $w$ ) of the book
4. The number of windows ( $w$ ) in a building and the hours ( $h$ ) it takes to clean them
5. The hours ( $h$ ) it takes to clean windows and the number of people ( $p$ ) cleaning
6. Tickets ( $t$ ) sold for a play and the amount of money ( $m$ ) collected
7. The number of gallons ( $g$ ) a gas tank holds and the cost ( $c$ ) to fill it
8. The number of laps ( $l$ ) you swim and the time ( $t$ ) you spend swimming
9. Which of the following could be an independent variable that affects how long a candle will burn?
  - A color of the candle
  - B diameter of the candle
  - C day the candle was made
  - D state the candle was made in

10. **Reason** Sue says time ( $t$ ) can only be an independent variable. Do you agree? Explain.

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11. Write your own situation that has an independent and dependent variable. Underline the independent variable and circle the dependent variable in the situation.

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